ANCHOR QEA

614 Magnolia Avenue
Ocean Springs, Mississippi 39564
Phone 228.818.9626
Fax 228 818 9631
www.anchorqea.com

MEMORANDUM

To:	Gary Miller U.S. Environmental Protection Agency	**Date:**	July 14, 2016
From:	David Keith, Anchor QEA, LLC	**Project:**	150557-01.01
Cc:	Dave Moreira, McGinnes Industrial Maintenance Corporation Philip Slowiak, International Paper Company Jennifer Sampson, Integral Consulting Inc. Craig Hutchings, Integral Consulting Inc.		
Re:	Modified Porewater SPME Sampling Intervals		

This memorandum outlines the final sampling intervals for solid-phase microextraction (SPME) fibers used in the porewater sampling at the San Jacinto River Waste Pits Superfund Site, based on Site conditions during the deployment of the samplers. The original proposed sampling intervals were outlined in Table 4 of the Addendum 1 to the Sampling and Analysis Plan (SAP) TCRA Cap Porewater Assessment (Integral and Anchor QEA 2016). These intervals were based on the 2012 sampling effort where the samplers were installed to the design thickness of the armored cap at that location. Modifications to the SPME sampling intervals are needed at some locations for two reasons:

1. The SPME was deployed in a cap layer that was greater than the design thickness. When this occurred, the fibers were deployed to the bottom of the cap layer by the USEPA Dive Team. This differs from the 2012 sampling effort when fibers were deployed from the top of the cap to the design depth.
2. Five centimeters were removed from each fiber spiked with performance reference compounds (PRCs) to assess initial PRC concentrations after storage in Houston, Texas, and prior to deployment in the field. This analysis is described in Attachment 2 of Addendum 1 to the Sampling and Analysis Plan (SAP): TCRA Cap Porewater Assessment the Porewater and Groundwater Performance Reference Compound Fiber Analysis Memorandum (Anchor QEA 2016).

The modified SPME sampling intervals are provided in Table 1. As outlined in the SAP, the objective of the chosen intervals is to determine dissolved dioxin and furan concentrations at the top, middle, and bottom layers of the armor cap at each location.

The porewater samplers are scheduled to be processed for analysis the week of July 17, 2016.

REFERENCES

Anchor QEA, 2016. *Porewater and Groundwater Performance Reference Compound Fiber Analysis.* San Jacinto River Waste Pits Superfund Site. May 2016.

Integral and Anchor QEA, 2016. *Addendum 1 to the Sampling and Analysis Plan (SAP) TCRA Cap Porewater Assessment,* San Jacinto River Waste Pits Superfund Site. February 2016.

TABLES

Table 1
Modified Porewater SPME Sampling Intervals

Sampling Location	Sample Code	Sampler Type	Original 2012 Depth Interval (inches)[1]	Design Cap Depth (inches)	Actual Cap Thickness (inches)	2016 Depth Interval [1,2,3] (inches)
SJCR001	SJCR-001-SP-2-A	PRC[4]	1-3	12	12	3-5
SJCR001	SJCR-001-SP-2-B	PRC[4]	4-6			6-8
SJCR001	SJCR-001-SP-2-C	PRC[4]	7-9			9-11
SJCR002[5]	SJCR-002-SP-2-A-W	PRC with surface water	5-7	--	--	5-7
SJCR002	SJCR-002-SP-2-A	PRC[4]	1-3	18	21	3-5
SJCR002	SJCR-002-SP-2-B	PRC[4]	8-10			9-11
SJCR002	SJCR-002-SP-2-C	PRC[4]	15-17			16-18
SJCR003	SJCR-003-SP-2-A	PRC[4]	1-3	12	20	11-13
SJCR003	SJCR-003-SP-2-B	PRC[4]	5 5-7 5			14-16
SJCR003	SJCR-003-SP-2-C	PRC[4]	10-12			17-19
SJCR004	SJCR-004-SP-2-A	PRC[4]	1-3	12	12	3-5
SJCR004	SJCR-004-SP-2-B	PRC[4]	7 2-9 2			6-8
SJCR004	SJCR-004-SP-2-C	PRC[4]	13 5-15 5			9-11
SJCP001	SJCP-001-SP-1-A-DUP	SPME with duplicate	1-3	12	12	1-3
SJCP001	SJCP-001-SP-1-B-DUP	SPME with duplicate	4-6			4-6
SJCP001	SJCP-001-SP-1-C-DUP	SPME with duplicate	7-9			7-9
SJCP001	SJCP-001-SP-1-A	SPME	1-3			1-3
SJCP001	SJCP-001-SP-1-B	SPME	4-6			4-6
SJCP001	SJCP-001-SP-1-C	SPME	7-9			7-9
SJCP002	SJCP-002-SP-1-A	SPME	1-3	12	18	7-9
SJCP002	SJCP-002-SP-1-B	SPME	4-6			11-13
SJCP002	SJCP-002-SP-1-C	SPME	7-9			15-17
SJCP003	SJCP-003-SP-1-A	SPME	1-3	12	16	5-7
SJCP003	SJCP-003-SP-1-B	SPME	4-6			9-11
SJCP003	SJCP-003-SP-1-C	SPME	7-9			13-15
SJCP004	SJCP-004-SP-1-A	SPME	1-3	12	23	12-14
SJCP004	SJCP-004-SP-1-B	SPME	4-6			16-18
SJCP004	SJCP-004-SP-1-C	SPME	7-9			20-22
SJCP005	SJCP-005-SP-1-A-W	SPME with surface water	5-7	--	--	5-7
SJCP005	SJCP-005-SP-1-A	SPME	1-3	18	18	1-3
SJCP005	SJCP-005-SP-1-B	SPME	9-11			8-10
SJCP005	SJCP-005-SP-1-C	SPME	17-19			15-17
SJCP006	SJCP-006-SP-1-A	SPME	1-3	18	18	1-3
SJCP006	SJCP-006-SP-1-B	SPME	5 3-7 3			8-10
SJCP006	SJCP-006-SP-1-C	SPME	9 5-11 5			15-17
SJCP007	SJCP-007-SP-1-A	SPME	1-3	18	21	3-5
SJCP007	SJCP-007-SP-1-B	SPME	10-12			11-13
SJCP007	SJCP-007-SP-1-C	SPME	19-21			19-21
SJCP008	SJCP-008-SP-1-A-W	SPME with surface water	5-7	--	--	5-7
SJCP008	SJCP-008-SP-1-A	SPME	1-3	12	11	1-3
SJCP008	SJCP-008-SP-1-B	SPME	10-12			4-6
SJCP008	SJCP-008-SP-1-C	SPME	19-21			7-9
SJCP009	SJCP-009-SP-1-A	SPME	1-3	18	24	3-5
SJCP009	SJCP-009-SP-1-B	SPME	10-12			10-12
SJCP009	SJCP-009-SP-1-C	SPME	19-21			19-21
SJCP009	SJCP-009-SP-1-A-DUP	SPME with duplicate	1-3			3-5
SJCP009	SJCP-009-SP-1-B-DUP	SPME with duplicate	10-12			10-12
SJCP009	SJCP-009-SP-1-C-DUP	SPME with duplicate	19-21			19-21
SJCP010	SJCP-010-SP-1-A	SPME	1-3	12	12	1-3
SJCP010	SJCP-010-SP-1-B	SPME	10-12			4-6
SJCP010	SJCP-010-SP-1-C	SPME	19-21			7-9

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Sampling Location	Sample Code	Sampler Type	Original 2012 Depth Interval (inches)[1]	Design Cap Depth (inches)	Actual Cap Thickness (inches)	2016 Depth Interval [1,2,3] (inches)
SJCP011	SJCP-0011-SP-1-A	SPME	1-3	12	12	1-3
SJCP011	SJCP-0011-SP-1-B	SPME	4 5-6 5			4 5-6 5
SJCP011	SJCP-0011-SP-1-C	SPME	8-10			8-10
SJCP012	SJCP-012-SP-1-A	SPME	1-3	12	12	1-3
SJCP012	SJCP-012-SP-1-B	SPME	7-9			4-6
SJCP012	SJCP-012-SP-1-C	SPME	13-15			7-9
SJCP013	SJCP-013-SP-1-A	SPME	1-3	12	>12	1-3
SJCP013	SJCP-013-SP-1-B	SPME	10-12			4-6
SJCP013	SJCP-013-SP-1-C	SPME	19-21			7-9
SJCP014	SJCP-014-SP-1-A	SPME	1-3	18	18	1-3
SJCP014	SJCP-014-SP-1-B	SPME	8 5-10 5			8 5-10 5
SJCP014	SJCP-014-SP-1-C	SPME	16-18			16-18

Notes

1 Depth intervals are referenced from the top of the cap SPME fibers were deployed from the top of the cap to design depth in 2012, however the 2016 SPME fibers were deployed to the bottom of the cap

2 Sample depths may change based on field conditions during retrieval

3 Gray highlighted cells denote that the proposed sample depth is different from the original sample depth

4 PRC-spiked fibers had 5 centimeters removed from the fiber before deployment for analysis of initial PRC concentrations

5 PRC-spiked surface water fiber was deployed at SJCR002 instead of SJCR001 per the SAP